REMARKS

Applicant respectfully requests reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claim 12 is currently being amended.

This amendment changes claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1 and 3-12 are now pending in this application.

Objections to the Specification

The Office Action objected to the specification for informalities. Appropriate amendments have been made to the specification paragraph as cited on page 10. The Applicants were not able to locate the reference to "grooves 5" as cited on page 9. Reconsideration of the objection is respectfully requested.

Claims 8 and 12 As Amended Meet the Requirements of 35 U.S.C. §112 ¶1

The Office Action rejected claims 8 and 12 under 35 U.S.C. § 112, paragraph 1.

Claim 12 has been amended to recite Germanium instead of Gallium. Support for this amendment is found at least at page 6, ll. 11-12.

Claim 8 is believed to be allowable as written. The material cited in the previous office action demonstrates that the conductivity of the amorphous Germanium is less than that of the substrate—which indicates an embodiment in which the amorphous Germanium is not doped. Furthermore, the a-Ge is applied by sputtering or vapor deposition and not subsequently doped—indicating that undoped Germanium is used.

Claims 1 and 3-11 are Patentable Under 35 U.S.C. §103(a)

The Office Action rejected claims 1 and 3-11 under 35 U.S.C. §103(a) over Hammacher et al. in view of Luke, et al. Applicants respectfully request reconsideration of the application in light of the arguments that follow.

In the previous amendment, Applicants argued that there was no teaching in the cited references that would lead a person of ordinary skill in the art to use a structured a-Ge layer. Rather, as taught by Luke, et al., the person of ordinary skill in the art would use the a-Ge layer as a passivation layer and preserve the structure between metal electrodes.

In response to the Applicants' arguments presented in the previous Amendment, the Office Action reasoned that (1) in fact a "bare substrate" without a passivation layer will perform better at higher temperatures; (2) Hammacher indicates a detector without a passivation layer and (3) Luke et al. indicates that a-Ge can be used as a blocking contact to replace conventional contacts.

In response to the first finding, Applicants' respectfully submit that the reasoning is not logical. The higher temperature operation range of bare devices is due to the leakage current of the a-Ge at those temperatures, as explained on p. 250 of Hansen, *et al.*, which is significant around the metal contacts (hence the need for blocking contacts). But the Office Action presupposes a hypothetical prior art structure where there is a-Ge underneath the metal contacts, but not between the contacts. This means that a person of skill in the art would sacrifice the benefit of the passivation layer for no benefit in temperature with the hypothetical detector proposed by the Office Action. Hence, it is not believed that Hansen, et al. provides motivation to make the specific structure claimed by the Applicants.

With regard to the second and third findings, it is not true that replacing a B doped layer with an a-Ge layer would lead to an enhanced blocking contact since the contact used by Hamacher is already a very good blocking contact. Furthermore, the boron doped layer is very stable. An undoped Germanium layer is less stable compared with the Boron layer known from Hamacher et al. Further, it is more difficult to make an electrical contact with an undoped a-Germanium layer compared with the corresponding layer in the detector of

Hamacher, since an undoped a-Ge layer is sensitive. For these reasons, a person of ordinary skill in the art would not replace the Boron-doped layer in the detector of Hamacher, et. al. by an undoped a-Ge in order to obtain a good bipolar blocking contact without the surprising finding of the Applicants' that detection capability is improved with the Applicants' claimed structure.

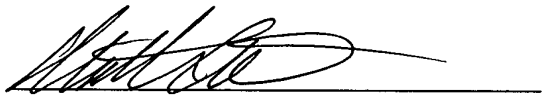
For these reasons, it is believed that there would have been no motivation to combine Hamacher *et al.* with Luke *et al.* to make a device with the structural characteristics as claimed in claim 1.

Claims 3-11 are ultimately dependent from claim 1, and patentable for at least the same reasons.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

Date July 30, 2007 (Monday)

By 

FOLEY & LARDNER LLP
Customer Number: 22428
Telephone: (202) 295-4618
Facsimile: (202) 672-5399

Matthew A. Smith
Attorney for Applicant
Registration No. 49,003